

WHAT IS CLAIMED IS:

1. An antimicrobial composition, comprising:  
A major amount of propylene glycol C8 to C14 fatty acid ester; and  
5 An enhancer;  
wherein the propylene glycol C8 to C14 fatty acid ester comprises monoester in  
an amount greater than 60%.
- 10 2. The composition of claim 1, wherein the combination of the monoester and  
enhancer maintains stable activity.
3. The composition of claim 1 wherein the composition is stable at or above 4 deg  
C.
- 15 4. The composition of claim 1 wherein the concentration of propylene glycol ester  
remains substantially constant.
- 20 5. The composition of claim 1, wherein said fatty acid monoester is propylene  
glycol monolaurate, propylene glycol monocaprylate, propylene glycol monocaprate, or  
combinations thereof.
6. The antimicrobial composition of claim 1, further comprising a surfactant.
- 25 7. The composition of claim 6, wherein the surfactant is a nonionic surfactant.
8. The disinfectant composition of claim 7 wherein the surfactant is a  
polyoxyethylene/polyoxypropylene block copolymer.
- 30 9. The antimicrobial composition of claim 6, wherein the surfactant comprises an  
anionic surfactant.

10. The composition of claim 9 wherein the anionic surfactant is selected from the group consisting of acyl lactylate salts, dioctyl sulfosuccinate salts, lauryl sulfate salts, dodecylbenzene sulfonate salts, and salts of C8-C18 fatty acids.
- 5 11. The antimicrobial composition of claim 1, wherein the surfactant to ester ratio is 1:1 or less.
12. The antimicrobial composition of claim 1, comprising a C8 to C14 propylene glycol ester is present in an amount between 30 and 90 %.
- 10 13. The composition of claim 1, further comprising a C8 to C14 fatty acid glycerol monoester.
14. The formulation of claim 13, wherein said fatty acid monoester is glycerol monolaurate, glycerol monocaprylate, glycerol monocaprate, or combinations thereof.
- 15 15. The formulation of claim 1, wherein the enhancer is a chelating agent, an acid, or an alcohol.
- 20 16. The formulation of claim 15, wherein said chelating agent is EDTA or salts thereof.
17. The formulation of claim 15, wherein said enhancer is an organic acid.
- 25 18. The formulation of claim 17, wherein said organic acid is lactic, mandelic, succinic, tartaric, ascorbic, salicylic, glycolic, benzoic, acetic, malic, or adipic acid.
19. The formulation of claim 13, wherein said alcohol is selected from the group consisting of ethanol, isopropanol, octanol, and decanol.
- 30 20. The formulation of claim 1, wherein the enhancer is a phenolic compound.

21. The formulation of claim 20, wherein the enhancer is selected from the group consisting of butylated hydroxyanisole, butylated hydroxytoluene, tertiary butyl hydroquinone, and benzoic acid derivatives such as methyl, ethyl, propyl, and butyl parabens.

5

22. An antimicrobial composition, comprising:

A major amount of propylene glycol C8 to C14 fatty acid ester;

An enhancer;

10 wherein the ester comprises propylene glycol C8 to C14 fatty acid monoester in an amount greater than 60% and wherein the combination of the monoester and enhancer is stable.

23. An antimicrobial kit, comprising:

15 a first container with a major amount of propylene glycol C8 to C14 fatty acid ester;

A surfactant; and

A second container comprising an enhancer;

20 Wherein the ester in the first container comprises propylene glycol C8 to C14 fatty acid monoester in an amount greater than 60%.

24. The kit of claim 23, wherein the first container further comprises an enhancer.

25 25. The antimicrobial kit of claim 23, wherein the combination of the ester and the enhancer maintains stable activity.

25

26. The kit of claim 23, wherein said kit further comprises a label or package insert indicating that contents of said first container and said second container are mixed to produce an antimicrobial formulation that is effective for reducing microbe levels on a substrate.

30

27. The kit of claim 23, wherein said label or package insert further indicates that said antimicrobial formulation is diluted before applying.

28. The kit of claim 23, wherein said enhancer is an organic acid selected from the group consisting of lactic, mandelic, succinic, tartaric, ascorbic, salicylic, glycolic, benzoic, acetic, malic, or adipic acid.
- 5
29. An antimicrobial kit, comprising:  
a first container with a major amount of antimicrobial lipid selected from the group consisting of a fatty acid ester of a polyhydric alcohol, a fatty ether of a polyhydric alcohol, or alkoxylated derivatives thereof;  
10 A surfactant; and  
A second container comprising an enhancer;  
Wherein the ester in the first container comprises propylene glycol C8 to C14 fatty acid monoester in an amount greater than 60%.
- 15
30. The kit of claim 29, wherein the first container further comprises an enhancer.
31. A method of disinfecting a substrate using the composition of claim 1.
32. The method of claim 31, wherein the substrate is selected from the group  
20 consisting of meat, meat products, plants and plant parts.
33. The method of claim 32, wherein the substrate is an inanimate surface selected from the group of textiles, glass, polymeric surfaces, metal, wood, and rubber.
- 25
34. A method of using the composition of claim 1, the method comprising the step of applying the composition of claim 1 to a substrate.
35. A method of using the composition of claim 2, the method comprising the step of applying the composition of claim 2 to a substrate.
- 30
36. The method of claim 31, further comprising the step of diluting the composition of claim 1 with a vehicle before applying the composition to a substrate

37. The method of claim 32, wherein the substrate is selected from the group consisting of meat, plants, plant parts, textiles, glass, polymeric surfaces, metal, wood and rubber.

5

38. A method of using the composition of claim 1, the method comprising the step of applying the composition of claim 1 topically to skin and hair of mammals.

39. The formulation of claim 1, further comprising a flavorant.

10

40. A method for reducing microbial levels on a substrate comprising contacting a substrate with an effective amount of an antimicrobial formulation, said antimicrobial formulation comprising a majority of a C8 to C14 fatty acid propylene glycol ester, and an enhancer.

15

41. An antimicrobial composition, comprising:

A major amount of antimicrobial lipid selected from the group consisting of a fatty acid ester of a polyhydric alcohol, a fatty ether of a polyhydric alcohol, or alkoxylated derivatives thereof; and

20

An enhancer;

wherein the composition is a liquid at or above 4 deg C.

42. The composition of claim 41 wherein the antimicrobial lipid is a liquid at or above 4 deg C.

25

43. The composition of claim 41, further comprising a surfactant.

44. A method of applying the antimicrobial composition of claim 41 to a substrate, comprising the steps of

30

Diluting the antimicrobial composition, and

Applying the antimicrobial composition to a substrate.

45. A method of applying the antimicrobial composition of claim 41 to a substrate, comprising the step of applying the antimicrobial composition to a substrate.

5 46. A method of applying an antimicrobial composition, the method comprising the steps of:

Applying an antimicrobial composition comprising a major amount of an antimicrobial lipid selected from the group consisting of a fatty acid ester of a polyhydric alcohol, a fatty ether of a polyhydric alcohol, or alkoxylated derivatives thereof; and

10 Applying an enhancer to the substrate.

47. The method of claim 46 wherein the antimicrobial composition is applied to the substrate before the enhancer is applied.

15 48. The method of claim 46 wherein the antimicrobial composition is applied to the substrate after the enhancer is applied.